

AMENDMENT TO THE CLAIMS

1. (Currently amended) An apparatus, comprising:
  - a first line receiver coupled to receive first physical layer quality data, the first physical layer quality data including a quality of at least one of a voltage amplitude, a current amplitude and an impedance matching characteristic; and
  - a first line driver coupled to transmit control primitive data that includes an adjustable pre-emphasis and that has a response to the first physical layer quality data that adjusts the physical layer quality to a quality standard.
2. (Currently amended) The apparatus of Claim 1 wherein the first physical layer quality data is sensed in real time.
3. (Previously Presented) The apparatus of Claim 1 wherein the first physical layer quality data is dynamically calibrated.
4. (Currently amended) The apparatus of Claim 1 wherein the first physical layer quality data includes the voltage amplitude and a frequency rolloff characteristic.
5. cancelled.
6. cancelled.
7. (Previously Presented) The apparatus of Claim 1 wherein the apparatus is mounted in a storage device, and the apparatus couples the storage device to a host computer system.
8. (Previously Presented) The apparatus of Claim 1 wherein the apparatus is mounted in a host computer system, and the apparatus couples the host computer system to a storage device.

9. (Previously Presented) The apparatus of Claim 1 wherein the apparatus couples to a serial bus that comprises two pairs of conductors.

10. (Currently amended) An apparatus, comprising:

a line receiver coupled to receive physical layer quality data, the physical layer quality data including a quality of at least a frequency rolloff; and  
a line driver coupled to transmit control primitive data that includes an indication of the quality of the frequency rolloff and that is responsive to the physical layer quality data.

11. (Previously Presented) The apparatus of Claim 10 wherein the control primitive data is generated in real time.

12. (Currently amended) The apparatus of Claim 10 and further comprising:

a second quality sensing circuit that comprises:  
a physical layer quality sensor sensing a received first signal;  
a quality standard; and  
a quality compare circuit comparing the received first signal to the quality standard and providing the second control primitives primitive data.

13. (Previously Presented) The apparatus of Claim 10 wherein the physical layer quality data include an indication of amplitude.

14. cancelled.

15. cancelled.

16. (Previously Presented) The apparatus of Claim 10 wherein the line receiver is mounted in a storage device and couples the storage device to a host computer system.

17. (Previously Presented) The apparatus of Claim 10 wherein the line receiver is mounted in a host computer system and couples the host computer system to a storage device.

18. (Previously Presented) The apparatus of Claim 10 wherein the line receiver and line driver couple to a serial bus that comprises two pairs of conductors.

19. (Currently amended) An apparatus, comprising:

a first line driver transmitting user data and primitives at a first end of a serial bus, the first line driver having a control input that controls a transmitted physical layer quality at the first end;

a quality sensing circuit that makes a quality comparison of a quality standard to a physical layer quality that includes an amplitude and a frequency rolloff, and that generates control primitives that include data representative of the quality comparison; and

a second line driver at the second end of the serial bus transmitting the control primitives at the second end, and a first line receiver at the first end receiving the control primitives to provide closed loop control of the received physical layer quality as a function of the data representative of the quality comparison.

20. (Previously Presented) A system comprising the apparatus of Claim 19 and further comprising a second apparatus, substantially the same as the apparatus of Claim 19, the second apparatus controlling a second physical layer quality in a direction on the serial bus that is opposite to the direction of control of the apparatus of Claim 19, to provide bi-directional physical layer quality control on the serial bus.

21. cancelled.

22. cancelled.

23. (Previously Presented) The apparatus of Claim 19 wherein the serial bus comprises two pairs of conductors.

24. (Previously Presented) The apparatus of Claim 19 wherein the serial bus carries user data between a first functional device and a second functional device.

25. (Previously Presented) The apparatus of Claim 24 wherein the first functional device is a storage device and the second functional device is a host computer system.